

**AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Clean Water Act as amended (33 U.S.C. §§1251 et seq.; the “CWA”), and the Massachusetts Clean Waters Act, as amended (M.G.L. Chap. 21, §§26-53),

Town of Plymouth

Department of Public Works

is authorized to discharge from a facility located at

**Plymouth Wastewater Treatment Plant
131 Camelot Drive
Plymouth, MA 02360**

to receiving water named

Plymouth Harbor

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective sixty days from the date of signature.

This permit and the authorization to discharge expire at midnight, five years (5) from the effective date.

This permit supersedes the permit issued on August 7, 2000 and modified on October 30, 2000.

This permit consists of 13 pages in Part I, including effluent limitations, monitoring requirements; Attachments A through C; and 35 pages in Part II, including General Conditions and Definitions.

Signed this 29th day of November, 2004

/s/

SIGNATURE ON FILE

Linda M. Murphy, Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

Director
Division of Watershed Management
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

- During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall number 001. Such discharge shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	<u>Units</u>	<u>Discharge Limitation</u>			<u>Monitoring Requirement</u>	
		<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type⁴</u>
Flow ²	MGD	1.75	----	Report	Continuous	Recorder
BOD ₅ ³	mg/l	30	45	Report	3/Week	8-Hour
	lbs/day	438	657			Composite ⁵
TSS ³	mg/l	30	45	Report	3/Week	8-Hour
	lbs/day	438	657			Composite ⁵
Settleable Solids	ml/l	0.1	----	0.3	1/Day	Grab
pH	S.U.	See Part I.A.1.b.			1/Day	Grab
Dissolved Oxygen ⁵	mg/l	Report			1/Day	Grab
Fecal Coliform Bacteria ^{1,6}	cfu/100 ml	14	----	43	3/Week	Grab
Total Residual Chlorine ⁹	ug/l	75	----	130	2/Day	Grab ⁵
Total Residual Chlorine ^{7,8,9}	ug/l	Report	----	Report	Continuous	Recorder
Total Ammonia Nitrogen, as N (June 1 to October 31)	mg/l	Report	----	----	1/Week	8-Hour Composite ⁵

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<u>Effluent Characteristic</u>	<u>Units</u>	<u>Discharge Limitation</u>			<u>Monitoring Requirement</u>	
		<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type</u> ⁴
Total Kjeldahl Nitrogen	mg/l	Report	----	----	1/Week	8-Hour Composite ⁵
Total Nitrate	mg/l	Report	----	----	1/Week	8-Hour Composite ⁵
Total Nitrite	mg/l	Report	----	----	1/Week	8-Hour Composite ⁵
Total Copper ⁹	ug/l	37	----	57	1/Month	8-Hour Composite ⁵
Whole Effluent Toxicity Test ¹⁴	Acute LC ₅₀ ≥ 100% ¹² Chronic C-NOEC ≥ 10% ¹³				4/year ¹¹	8-Hour Composite ⁵

Footnotes:

1. Required for State Certification
2. For flow, report maximum and minimum daily rates and total flow for each operating date. This is an annual average limit, which shall be reported as a rolling average. The first value will be calculated using the monthly average flow for the first full month ending after the effective date of the permit and the eleven previous monthly average flows. Each subsequent month's DMR will report the annual average flow that is calculated from that month and the previous 11 months.

Report maximum and minimum daily rates and total flow to the groundwater discharge for each operating date.

3. Sampling required for influent and effluent. The effluent samples for BOD₅ and TSS shall be taken when the effluent pumps are operating.
4. All samples shall be tested using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. All samples shall be 8-hour composites unless specified as a grab sample in 40 CFR §136.

All sampling shall be representative of the effluent that is discharged through outfall 001. A routine sampling program shall be established in which samples are taken at the same location, same time and same days of every month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report that is submitted to EPA.

5. A 8-hour composite sample will consist of at least t eight (8) grab samples taken during one working day. A working day is defined as a twenty-four hour cycle such as 12:00 Midnight through 12:00 Midnight the following day.

Eight hour composite samples shall be taken from the effluent storage tank after dechlorination. All grab samples shall be taken after dechlorination. Any change in sampling location must be reviewed and approved in writing by EPA and MADEP.

Sampling for dissolved oxygen shall be at a location that is representative of the dissolved oxygen levels in the final effluent.

6. Fecal coliform monitoring will be conducted year round. This is also a State certification requirement. Fecal coliform discharges shall not exceed a monthly geometric mean of 14 colony forming units per 100 ml, nor shall they exceed 43 colony forming units per 100 ml as a daily maximum. This monitoring shall be conducted concurrently with TRC sampling.

The chlorination system shall include an alarm system for indicating system interruption or malfunctions during a decant cycle.

Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection in the effluent shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time that the reduced levels of chlorine chemicals occurred.

7. The permittee shall also report the average monthly and daily maximum discharge of TRC using data collected by the continuous TRC analyzer. The permittee shall collect and analyze, a minimum of one grab sample per day for calibration purposes. Four continuous recording charts, (1/week) showing weekly data shall be submitted with the monthly DMRs. The result of the grab sample(s) and a comparison to the continuous analyzer reading, including the time of the grab samples, shall be included with the DMRs.

The permittee shall collect one additional TRC grab sample per day, if the continuous analyzer is not working properly. Any additional grab sample monitoring results shall be included in the calculation for compliance for the TRC limit for the compliance report.

8. Within six month of the effective date of the permit, emergency procedures shall be completed for addressing and correcting any interruptions or malfunctions with either the chlorination and dechlorination system that may occur
9. The minimum detection level (ML) for total residual chlorine is defined at 20 ug/l. This value is the minimum detection level for chlorine using EPA approved methods found in the most currently approved version of Standard Methods for the Examination of Water and Wastewater, Method 4500 Cl-E and G, or US EPA Manual of Methods for Chemical Analysis of Water and Wastes, Method 330.5. One of these methods must be used to determine total residual chlorine. For effluent limitations less than 20 ug/l, compliance/non-compliance will be determined based on the ML. Sample results of 20 ug/l or less shall be reported as zero on the discharge monitoring report.
10. The minimum detection level (ML) for copper is defined as 3.0 ug/l. This value is the minimum detection level for copper using the Furnace Atomic Absorption analytical method (EPA Method 220.2). For effluent limitations less than 3.0 ug/l, compliance/non-compliance will be determined based on the ML form this method, or another approved method that has an equivalent or lower ML, one of which must be used. Sample results of 3.0 ug/l or less shall be reported as zero on the Discharge Monitoring Report.
11. The permittee shall conduct chronic and modified acute toxicity tests four times per year. The chronic test may be used to calculate the acute LC₅₀ at the 48 hour exposure interval. The permittee shall test chronic and modified acute inland silverside (Menidia beryllina), perform a fertilization tests using the sea urchin (Arbacia punctulata), and an acute test using mysid shrimp (Mysidopsis bahia). Toxicity test samples shall be collected during the second week of the months of January, April, July, and October. The test results shall be submitted by the last day of the month following the completion of the test. **The results are due February 28, May 31, June 30, and November 30, respectively.** The tests must be performed in accordance with test procedures and protocols specified in **Attachment A-1 and A-2** of this permit.

Test Dates Second Week in	Submit Results By:	Test Species	LC ₅₀	Chronic Limit C-NOEC
January April July October	February 28 May 31 June 30 November 30	<u>Menidia beryllina</u> (Silverside) <u>Arbacia punctulata</u> (Sea Urchin) and <u>Mysidopsis bahia</u> (mysid shrimp) See Attachment A-1 and A-2	100%	≥ 10%

12. The LC₅₀ is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
13. C-NOEC (chronic-no observed effect concentration) is defined as the highest concentration of toxicant or effluent to which organisms are exposed in a life cycle or partial life cycle test which causes no adverse effect on growth, survival, or reproduction at a specific time of observation as determined from hypothesis testing where the test results exhibit a linear dose-response relationship. However, where the test results do not exhibit a linear dose-response relationship, the permittee must report the lowest concentration where there is no observable effect. The "10 % or greater" limit is defined as a sample which is composed of 10% (or greater) effluent the remainder being dilution water. This is a maximum daily limit derived as a percentage of the inverse of the dilution factor of 10.
14. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall follow procedures outlined in **Attachment A-1 Section IV., DILUTION WATER** in order to obtain permission to use an alternate dilution water. In lieu of individual approvals for alternate dilution water required in **Attachment A-1**, EPA-New England has developed a Self-Implementing Alternative Dilution Water Guidance document (called "Guidance Document") which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. If this Guidance document is revoked, the permittee shall revert to obtaining approval as outlined in **Attachment A-1**. The "Guidance Document" has been sent to all permittees with their annual set of DMRs and Revised Updated Instructions for Completing EPA's Pre-Printed NPDES Discharge Monitoring Report (DMR) Form 3320-1 and is not intended as a direct attachment to this permit. Any modification or revocation to this "Guidance Document" will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in **Attachment A-1**.

PART I.A.1. (continued)

- a. The discharge shall not cause a violation of the water quality standards in the receiving waters.
 - b. The pH of the effluent shall not be less than 6.0 S.U., nor greater than 8.5 S.U. at any time.
 - c. The discharge shall not cause objectionable discoloration of the receiving waters.
 - d. The effluent shall contain neither a visible oil sheen, or foam, nor floating solids at any time.
 - e. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.
 - f. When the effluent discharged for a period of 90 consecutive days exceeds 80 percent of design flow, the permittee shall submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.
 - g. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.
 - h. The results of sampling for any parameter above its required frequency must also be reported.
2. All POTWs must provide adequate notice to the Director of the following:
- a. Any new introduction of pollutants into that POTW from an indirect discharger in a primary industry category discharging process water; and/or
 - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
 - c. For purposes of this paragraph, adequate notice shall include information on:
 - (1) the quantity and quality of effluent introduced into the POTW; and
 - (2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

3. Prohibitions Concerning Interference and Pass-Through:

Pollutants introduced into POTWs by a non-domestic source shall not pass-through the POTW or interfere with the operation or performance of the works.

4. Toxics Control

- a. The permittee shall not discharge any pollutant or combinations of pollutants in toxic amounts.
- b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

5. Numerical Effluent Limitations for Toxicants

EPA or MA DEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (CWA), state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including by not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

B. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge to surface water only in accordance with the terms and conditions of this permit and only from outfall listed in Part I.A.1. of this permit. Discharge of wastewater from any other surface water point source is not authorized by this permit and shall be reported in accordance with Section D.1.e.(1) of the General Requirements of this permit (Twenty-four hour reporting). Discharge to ground water is permitted only in accordance with the terms and conditions of the Groundwater Discharge Permit SE #0-677.

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions:

1. Maintenance Staff

The permittee shall provide adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit.

2. Preventative Maintenance Program

Maintain an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges.

3. Infiltration/Inflow Control Plan

The permittee shall develop and implement a plan to control infiltration and inflow (I/I) to the separate sewer system. The plan shall be available to EPA upon request and submitted to MA DEP within six months of the effective date of this permit (see page 1 of this permit for the effective date) and shall describe the permittee's program for preventing infiltration/inflow related effluent limit violations, and all unauthorized discharges of wastewater, including overflows and by-passes due to excessive infiltration/inflow.

The plan shall include:

- An ongoing program to identify and remove sources of infiltration and inflow. The program shall include the necessary funding level and the source(s) of funding.
- An inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts. Priority should be given to removal of public and private inflow sources that are upstream from, and potentially contribute to, known areas of sewer system backups and/or overflows.
- Identification and prioritization of areas that will provide increased aquifer recharge as the result of reduction/elimination of infiltration and inflow to the system.
- An educational public outreach program for all aspects of I/I control, particularly private inflow.

Reporting Requirements:

A summary report of all actions taken to minimize I/I during the previous calendar year shall be submitted to EPA and the MA DEP annually, by the anniversary date of the effective date of this permit. The summary report shall, at a minimum, include:

- A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year.
- Expenditures for any infiltration/inflow related maintenance activities and corrective actions taken during the previous year.
- A map with areas identified for I/I-related investigation/action in the coming year.
- A calculation of the annual average I/I, the maximum month I/I for the reporting year.
- A report of any infiltration/inflow related corrective actions taken as a result of unauthorized discharges reported pursuant to 314 CMR 3.19(20) and reported pursuant to the Unauthorized Discharges section of this permit.

D. ALTERNATE POWER SOURCE

In order to maintain compliance with the terms and conditions of this permit, the permittee shall continue to provide an alternative power source with which to sufficiently operate its treatment works (as defined at 40 CFR § 403.3).

E. PRETREATMENT

1. Limitations for Industrial Users:

- a. Pollutants introduced into POTW's by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.
- b. The permittee shall develop and enforce specific effluent limits (local limits) for industrial user(s), and all other users, as appropriate, which together with appropriate changes in the POTW treatment plant's facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within 120 days of the effective date of the permit, the permittee shall prepare and submit a written technical evaluation to the EPA analyzing the need to revise local limits. As part of this evaluation, the permittee shall assess how the POTW performs with respect to influent and effluent of pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety, and collection system concerns. In preparing this evaluation, the permittee shall complete and submit the attached form (Attachment B) with the technical evaluation to assist in determining whether existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if available and should be included in the report. Should the evaluation reveal the need to revise local limits, the permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. The Permittee shall carry out the local limits revisions in accordance with EPA Guidance Manual for the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program (December, 1987).
- c. The permittee must modify its pretreatment program to conform to all changes in the Federal Regulations that pertain to the implementation and enforcement of the industrial pretreatment program. The permittee must provide EPA, in writing, within 180 days of this permit's effective date proposed changes to the permittee's pretreatment program deemed necessary to assure conformity with current Federal Regulations. At a minimum, the permittee must address in its written submission the following areas: (1) enforcement response plan; (2) revised sewer use ordinances; and (3) slug control evaluations. The permittee will implement these proposed changes pending EPA Region I's approval under 40 CFR 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.E.1.b.

2. Industrial Pretreatment Program

- a. The permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the permittee's approved Pretreatment Program, and the General Pretreatment Regulations, 40 CFR 403. At a minimum, the permittee must perform the following duties to properly implement the Industrial Pretreatment Program (IPP):
 - (1) Carry out inspection, surveillance, and monitoring procedures which will determine, independent of information supplied by the industrial user, whether the industrial user is in compliance with the Pretreatment Standards. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP, but in no case, less than once per year and maintain adequate records.
 - (2) Issue or renew all necessary industrial user control mechanisms within 90 days of their expiration date or within 180 days after the industry has been determined to be a significant industrial user.
 - (3) Obtain appropriate remedies for noncompliance by any industrial user with any pretreatment standard and/or requirement.
 - (4) Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.
- b. The permittee shall provide the EPA (and States) with an annual report describing the permittee's pretreatment program activities for the twelve month period ending 60 days prior to the due date in accordance with 403.12(i). The annual report shall be consistent with the format described in Attachment C of this permit and shall be submitted no later than June 1 of each year.
- c. The permittee must obtain approval from EPA prior to making any significant changes to the industrial pretreatment program in accordance with 40 CFR 403.18(c).
- d. The permittee must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the Federal Regulations at 40 CFR 405 et. seq.

F. SLUDGE CONDITIONS

- 1. The Permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.
- 2. The permittee shall comply with the more stringent of either state or federal requirements.
- 3. The technical standards (Part 503 regulations) apply to facilities which perform one or more of the following use or disposal practices:

- a. Land application - the use of sewage sludge to condition or fertilize the soil
 - b. Surface disposal - the placement of sewage sludge in a sludge-only landfill
 - c. Placement of sludge in a municipal solid waste landfill.
4. These conditions do not apply to facilities which transport sewage sludge to another facility for use or disposal or which do not use or dispose of sewage sludge e.g. lagoons - reed beds ; or material described in 40 CFR 503.6 (Exclusions).
5. The permittee shall use and comply with the attached guidance document to determine appropriate conditions. Appropriate conditions contain the following elements:
- General requirements
 - Pollutant limitations
 - Operational standards (pathogen reduction requirements and vector attraction reduction requirements)
 - Management practices
 - Record keeping
 - Monitoring
 - Reporting

Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.

6. The permittee shall monitor the pollutant concentrations, pathogen reduction and vector attractions reduction at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year.

less than 290	1/ year
290 to less than 1500	1 /quarter
1500 to less than 15000	6 /year
15000 +	1 /month

7. The permittee shall sample the sewage sludge using the procedures detailed in 40 CFR 503.8.
8. The permittee shall submit an annual report containing the information specified in the guidance by February 19. Reports shall be submitted to the address contained in the reporting section of the permit. Sludge monitoring is not required by the permittee when the permittee is not responsible for the ultimate sludge disposal. The permittee must be assured that any third party contractor is in compliance with appropriate regulatory requirements. In such case, the permittee is required only to submit an annual report by February 19 containing the following information:
- Name and address of contractor responsible for sludge disposal
 - Quantity of sludge in dry metric tons removed from the facility by the sludge contractor

G. MONITORING AND REPORTING

1. Reporting

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report Forms(s) postmarked no later than the **15th day of the month** following the effective date of the permit.

Signed and dated originals of these, and all other reports required herein, shall be submitted to the director and the State at the following addresses:

Environmental Protection agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114

The State agency is:

Massachusetts Department of Environmental Protection
Bureau of Resource Protection
Southeast Regional Office
20 Riverside Drive
Lakeville, MA 02347

Signed and dated Discharge Monitoring Report forms and toxicity test reports required by this permit shall also be submitted to the State at:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, MA 01608

Signed and dated Pretreatment Reports shall also be submitted to the State at:

Massachusetts Department of Environmental Protection
Bureau of Water Resources
One Winter Street
Boston, MA 02108

H. STATE PERMIT CONDITIONS

This discharge permit is issued jointly by the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MA DEP) under federal and state law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the MA DEP pursuant to M.G.L. Chap. 21, §43.

Each agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension, or revocation of this permit shall be effective only with respect to the agency

taking such action, and shall not affect the validity or status of this permit as issued by the other agency, unless and until each agency has concurred in writing with such modification, suspension, or revocation. In the event any portion of this permit is declared invalid, illegal, or otherwise issued in violation of state law such permit shall remain in full force and effect under federal law as an NPDES permit issued by the U.S. Environmental Protection Agency.

In the event this permit is declared invalid, illegal or otherwise issued in violation of federal law, this permit shall remain in full force and effect under state law as a permit issued by the Commonwealth of Massachusetts.

(Plymouth\plymouth permit.wpd 1/4/05)